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SOLAR MODULATION OF THE COSMIC RADIATION IN THE HELIOSPHERE

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Changes in the solar modulation of galactic and anomalous component cosmic rays reflect changes in the structure and magnetic topology of the interplanetary medium. Therefore, to the extent that the modulation process is understood, the cosmic rays can be used as a probe of the medium to infer the extent and structure of the heliosphere in regions not directly sampled by spacecraft. The challenge to modulation theory and observation has been to determine which properties of the solar wind are most important for producing the observed modulation. Significant progress has been made in answering this question during the last solar cycle using observations from spacecraft at radii to 40 AU from the Sun and at latitudes up to 30 degrees with respect to the ecliptic. A brief summary of new results and observations (with specific attention to the STIP intervals XV-XIX) will be presented to illustrate the present state of our understanding of the relation between the solar wind and interplanetary magnetic field and the modulation of the cosmic radiation.